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Montgomery County Landfill Gas to Energy: Construction Update

This summer Montgomery County will open landfill gas to energy facilities at the Oaks and Gude Landfills. SCS Engineers began construction of the facilities in November 2008 and upon completion, the facilities together will produce 3.2 megawatts of renewable energy. The construction of the facility at Gude landfill was delayed due to the winter weather and freezing; however the Oaks facility construction is progressing and beginning to take on its final form. The largely anticipated “crane day” occurred at the Oaks Facility in early March and the Caterpillar and Jenbacher engines, switchgear and other auxiliary equipment to process landfill gas and generate electricity were placed on concrete pads. The primary critical path items for the remaining work at each site include the Pepco and Verizon wiring and equipment configuration approvals.



March 2009- Radiator is installed on the roof of the engine at Oaks Landfill.

Phase Two of Frederick County Single Stream Recycling Cart Roll-out

Frederick County is preparing to rollout the second phase of recycling cart distribution for the rural parts of the County to approximately 16,000 single family homes that have not previously received curbside recycling service. The County undertook an aggressive schedule for the conversion of the County’s dual stream curbside recycling collection program to a single stream program for the approxi-

mately 54,000 single family homes already receiving curbside recycling service. Phil Harris, Superintendent for Solid Waste in the Frederick County Division of Utilities and Solid Waste Management (DUSWM), noted that the participation rate in the areas with the new carts is extremely high. Once the second phase of this program is completed, curbside recycling service will be available to every single family home

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Transfer Station Opens in Frederick County

The official opening of Frederick County's processing facility and transfer station was marked on January 13, with a ribbon-cutting ceremony held by the Board of County Commissioners.

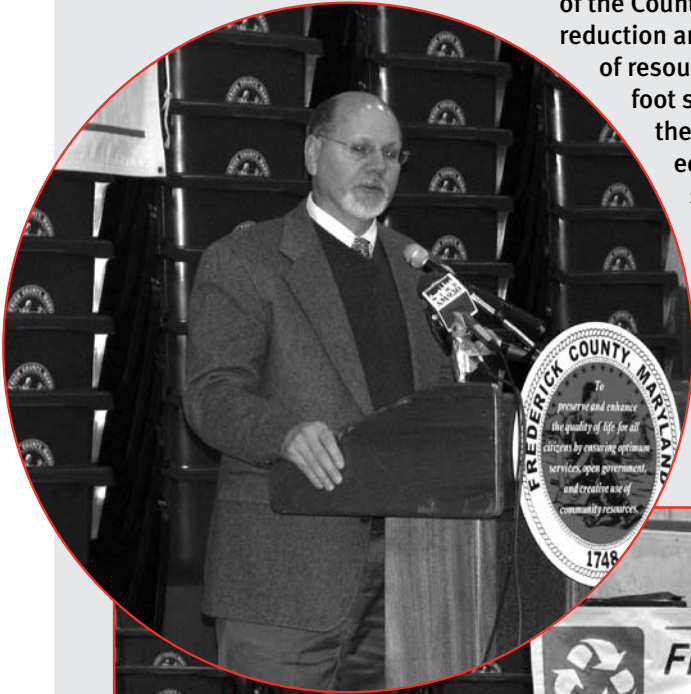
The accompanying program included an explanation and demonstration of the transfer

process with recyclable materials being discharged from an Allied Waste curbside collection vehicle and loaded on to tractor-trailers for transport to the WM Recycle America MRF in Elkridge, MD.

The new transfer station is located at the Frederick County Landfill, 9031 Reichs Ford Road, Frederick, MD and is an integral component of the County's strategy for waste reduction and better management of resources. The 56,053 square foot structure will increase the overall efficiency and economy of processing solid waste while also reducing the environmental impact of operations. The station's most significant aspect is the effect it will have on the County's recycling system. The new



facility is a key factor in the transition from the current recycling process to the new, highly anticipated single stream recycling program. The new residential single stream program began January 26, and the initial service area includes approximately 54,000 households.



Authority Assisting Baltimore City To Revamp Its Trash Collection

Baltimore City has engaged the Authority to provide the first comprehensive routing of its trash collection vehicles in over 25 years. Employing Gershman, Brickner & Bratton, Inc. (GBB) and its subsidiary, C2Logix as consultants, the Authority is helping the City dramatically alter the way it provides solid waste collection services to its citizens. Currently, Baltimore City collects mixed refuse from approximately 200,000 households twice a week, Monday through Saturday.

In an effort to save money and to perform more efficiently, the City is now looking at new waste collection options. GBB and C2Logix have presented alternatives that would create wholesale changes to the way the City collects solid waste to

Mayor Sheila Dixon and her staff for consideration.

The first option is to collect mixed refuse twice weekly Tuesday through Friday. This would allow the City to continue to visit households twice a week, but over a shorter period of time, cutting out weekend work. This option could save approximately up to \$2 million per year.

The second option involves mixed refuse collection once weekly, Tuesday through Friday and recycling collection once weekly, Tuesday through Friday. This option would increase the City's single stream recycling collections frequency from its present twice monthly to once a week in an effort to

augment the once weekly mixed refuse collection effort. This option would likely increase recycling in the City substantially, while saving the City approximately \$3 million annually.

Once the City decides which option to pursue, the consultants will present new routes as developed through their FleetRoute computer software to City collection personnel that will guide them through their routes point by point. These changes could be implemented in the City as early as July 1, 2009.

If you have any questions or need further information about this story, please contact Steve Blake at 410-333-2730 or at sblake@nmwda.org.

University Study on Clean Electricity Generation

A new study entitled "Is It Better to Burn or Bury Waste for Clean Electricity Generation?"* written by Susan Thorneloe of the U.S. Environmental Protection Agency's National Risk Management Research Laboratory and researchers at North Carolina State University has been published in the *Journal of Environmental Science and Technology*. This study evaluates emission factors and energy generated through landfill-gas-to-energy (LFGTE) projects and waste-to-energy (WTE) projects. The study involved an analysis of the comprehensive set of life-cycle emission factors per unit of electricity generated from landfill-gas-to-energy projects and waste-to-energy projects. According to the authors, this paper is the first to present a comprehensive set of life-cycle emission factors. In doing so, the study analyzes emission factors and data generated from a municipal solid waste decision sup-

port tool (MSW-DST). The MSW-DST was developed through a competed cooperative agreement between EPA's Office of Research and Development and RTI International.

Currently, the use of municipal solid waste to generate electricity through WTE and LFGTE projects represents roughly 14% of U.S. nonhydro renewable electricity generation. According to this report, 245 million tons of municipal solid waste (MSW) was generated in the United States, with 166 million tons discarded to landfills. Although recycling and composting rates have increased, the authors of this study point out that the waste discarded in landfills continues to increase. According to the study, if 166 million tons of MSW is discarded in landfills, approximately 65 kW h of electricity per ton of MSW can be generated. Whereas a WTE facility can generate approximately 600

kW h of electricity per ton of MSW (see table below).

Electricity Generated From 1 Ton of MSW (kW h/ ton)

Waste-to-Energy	470-930
Landfill-Gas-to-Energy	41-84

The paper finds that discarded MSW is a viable energy source for electricity generation in a carbon-constrained world. The paper also finds that waste-to-energy is capable of producing an order of magnitude more electricity from the same mass of waste as compared to landfill gas-to-energy recovery. The greenhouse gas and NOx emissions for WTE are lower than greenhouse gas and NOx emissions from LFGTE plants. These emission factors provide critical data that can show the value of waste-to-energy options as renewable energy projects.

*<http://pubs.acs.org/doi/pdfplus/10.1021/es802395e>

Phase Two of Frederick County Single Stream Recycling Cart Roll-out

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within the County, thus representing the largest geographic curbside recycling program in the state of Maryland.

To implement the single stream recycling program, the County utilized the Authority's on-call engineering contract with MSW Consultants to develop a Request for Proposals (RFP) and contract for the curbside collection of recyclable materials. Concurrent with the development and implementation

of the RFP and contract, the Authority issued an RFP and finalized a contract for the transportation and processing of recyclables collected in the County. WM Recycle America transports the County's recyclables to its processing facility in Elkridge, MD.

Frederick County's new single stream curbside recycling collection service features an extensive range of technologies that enhance the

overall program such as web based GPS/GIS routing and collection tracking, radio frequency identification for collection carts, and interactive collection reporting.

For more information about the Authority's on-call contracts, engineers or the transportation and processing contract please contact Andrew Kays - akays@nmwda.org or 410-333-2730.

Authority Marketing to Sell Renewable Energy Credits

The Northeast Waste Disposal Authority has recently entered into Agreements with Baltimore City and Prince George's County to sell Renewable Energy Credits (RECs) on their behalf. A REC is equivalent to one mega-watt hour of energy generated from a renewable energy source. The RECs are generated from the Baltimore City Back River Waste Water Treatment Plant, the Prince

George's County Brown Station Road Landfill, and the Prince George's County Corrections Facility. The Authority has worked with each jurisdiction to certify the Facilities as Renewable Energy Generators in Delaware, Maryland, and New Jersey where applicable. Certifying the Facilities in several States allows the Authority to sell the RECs to electricity suppliers who need to be in compliance

with a particular State Renewable Portfolio Standard (RPS). The RPS requirements are different for each State. The Authority has begun executing REC transactions which generate revenue for the City and the County.

Please contact John Schott at 410-333-2730 or jschott@nmwda.org for more information on Renewable Energy Credits.



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WasteWatch is published quarterly by the Northeast Maryland Waste Disposal Authority, an independent agency of the State of Maryland governed by its Member jurisdictions – Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Frederick County, Harford County, Howard County and Montgomery County.

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